

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2001-072414

(43)Date of publication of application : 21.03.2001

(51)Int.Cl.

C01G 1/02

C01G 23/00

C04B 35/46

G02B 1/02

G02B 5/18

(21)Application number : 11-247985

(71)Applicant : JAPAN SCIENCE & TECHNOLOGY CORP

(22)Date of filing : 01.09.1999

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## (54) PHOTONIC CRYSTAL AND ITS PRODUCTION

### (57)Abstract:

PROBLEM TO BE SOLVED: To obtain a new photonic crystal material and a method for producing the photonic crystal material.

SOLUTION: A solution of partial hydrolyzate of a metal oxide-based high-density metal alkoxide is cast into a micromold made by a photolithographic method on a substrate, gelled by enging and dried to produce a photonic crystal gel, for example, a transparent dried gel composed of BaTiO<sub>3</sub> particle of pseudo-cubic system having  $\leq 50$  nm particle diameter,  $\geq 2.4$  g/cm<sup>3</sup> density and substantially  $\leq 10$  nm pore diameter. Further the photonic crystal gel is sintered to produce a photonic crystal ceramic.

## LEGAL STATUS

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]